

SCHEDULING WITH DELAYED GRAPHS FOR COMMUNICATION NETWORKS

ABSTRACT OF THE DISCLOSURE

A network of nodes interconnected by links, such as a wavelength division
5 multiplexing (WDM) ring network, is modeled by a delayed graph in which propagation
delay between nodes is accounted for. Given the delayed graph, a traffic matrix for an
admissible traffic pattern is scheduled over a frame period. Scheduling of the traffic
matrix formulates a set of scheduling constraints based on the delays and decomposes the
traffic matrix into a set of transmission matrices. Each of the set of transmission matrices
10 is scheduled over the frame period.